National Infrastructure Advisory Council (NIAC)

Workforce Preparation, Education and Research Working Group

Status Report
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NIAC Workforce Preparation, Education & Research Update

- ☐ The two subgroups (Workforce Preparation and Education and Research) are rejoining.

- ☐ The Study Groups are finalizing inputs so the Working Group can develop recommendations.

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Efficacy of Cyber Corps (Scholarship for Service Program)

- ☐ Background
- ☐ Discussion Questions:
  - ■ Does SFS programs address the information security needs of critical infrastructure?
  - ■ Is the content of the SFS program of study appropriate?
  - ■ Where are COAE's finding experienced faculty?
  - ■ How is the SFS program dealing with the need to obtain security clearances for SFS graduates?
  - ■ What is the appropriate funding level for SFS?
  - ■ How are the SFS graduates being placed in government agency positions?

Efficacy of Cyber Corps (Scholarship for Service Program)

Enhancement Ideas under evaluation:

- ☐ Placement
- ☐ Security Clearances
- ☐ Faculty Experience
- ☐ Utilization of SFS graduates in Critical Infrastructure Protection

Research Update

☐ The Study Group continues to gather data addressing 4 key areas:

- ■ The need for a critical infrastructure protection and cyber security national research agenda.
- ■ The adequacy of the funding base for critical infrastructure protection and cyber security related research.
- ■ Research products "time-to-market" issues.
- ■ The adequacy of the related research national talent pool.

Research Study Group: Initial Thoughts

☐ There is a need for a formal coordinating structure for leadership and oversight of a national critical infrastructure security research agenda.

☐ A National Plan for critical infrastructure security research would provide focus.

☐ Even though substantial funds have been devoted to homeland security and critical infrastructure, funding for research is still insufficient.

☐ There is a need to cultivate and nurture the unique expertise represented by critical infrastructure and cyber-security academic researchers

Cyber Security Certification Programs

- DHS goals for Information Assurance (IA) certification program
  - Nationally recognized
  - Privately led
  - At appropriate levels to enhance public and private workforce needs
  - Working with DoD
- Institute of Defense Analyses mapping study
  - Matched commercial IA certification programs to DoD workforce levels and functions
  - 150 certifications by 50 vendors studied
  - Mapped to all applicable job skills and categories across DoD
  - Panel of 21 private, DoD, DHS, and NIST IA certification experts
  - Methodical approach, addressing both managerial and technical skills

Certification: Key Challenges

- Standardizing position attributes across Federal government requires extraordinary cooperation—private sector adds a layer of complexity.

- Issue of standards is complex for privately administered program with government stakeholders.

- Current testing methods may not adequately measure required KSAs (Knowledge, Skills, & Abilities).

K-12 Math and Science Competency

- The Problem we see: The country's long term security truly is tied to the quality of the workforce.
- The Administration has highlighted the problem in the "No Child Left Behind" act.
- The public has not embraced Education as a national priority; especially math and science education.
- We must find a way to engage the public with a sense of urgency.
- The "reading wars" and the "math wars" are counter productive and sapping resources away from the task of improving education.

K-12 Math and Science Competency

- Evidence-based curriculum and pedagogy are essential.
- Federally-funded research in curricula and teaching methods is needed where evidence is lacking.
- Greater transparency of the effectiveness of curricula and pedagogy is needed.
- Greater consistency between what is taught in teacher certification/training programs, in the classroom, and in textbooks is needed.
- There are vast differences in educational standards among the states.

NIAC Workforce Preparation, Education & Research Study Group Update

- ☐ Incentives to Attract Students into technical fields
  - ■ A predictable, consistent funding program for cyber education should be effective in training.
  - ■ Billets and clearances are a problem.
- ☐ International Competitiveness of US Education
  - ■ This is closely related to the K-12 question.
  - ■ Widespread availability of comparisons between US curricula and foreign curricula will shock most US parents.
  - ■ US teaches "inch deep and a mile wide" versus "narrow and deep" approach in successful foreign competitors.
- ☐ Timeliness of Security Clearance Process
  - ■ This issue is being worked by several other groups and we are using other's insights.
  - ■ We will be using information gathered to offer practical recommendations.

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- ☐ Cyber Security Curriculum Development
  - ■ College Education needs to be less vocational, or training oriented, and more core theory oriented. Provide educators with "summer internships" as a way to receive more "hands on" knowledge.
  - ■ Pay is an issue as private industry pays better. Need to encourage those with the most knowledge to teach.
  - ■ There is a need for more PH.Ds.

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NIAC Workforce Preparation, Education & Research Update

- ☐ The Working Group continues to collect and analyze information
- ☐ On track to complete report and recommendations by October NIAC meeting

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